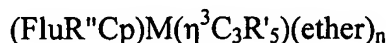


## AMENDMENTS TO THE CLAIMS

### Claims 1-14 (Cancelled)

15. (New) A metallocene catalyst component characterized by the formula:



wherein Cp is a substituted or unsubstituted cyclopentadienyl group, Flu is a substituted or unsubstituted fluorenyl group, R'' is a structural bridge between Cp and Flu imparting stereorigidity to the component, M is a metal Group III of the Periodic Table, each R' is the same or different and is hydrogen, a silyl group or a hydrocarbyl group having from 1 to 20 carbon atoms and n is 0, 1 or 2.

16. (New) The metallocene catalyst component of claim 15 wherein M is yttrium, lanthanum, neodymium or samarium.

17. (New) The metallocene catalyst component of claim 15 wherein M is yttrium.

18. (New) The metallocene catalyst component of claim 17 wherein R'' is an isopropylidene group, a diphenylmethylene group, an ethylenyl group or a dimethylsilyl group.

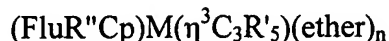
19. (New) The metallocene catalyst component of claim 18 wherein R'' is an isopropylidene group.

20. (New) The metallocene catalyst component of claim 19 wherein C<sub>3</sub>R'<sub>5</sub> is CH<sub>2</sub>-CH=CH<sub>2</sub>.

21. (New) The metallocene catalyst component of claim 17 wherein said ether group is selected from the group consisting of tetrahydrofuran dioxane, diethyl oxide and diisopropyl oxide.

22. (New) The metallocene catalyst component of claim 21 wherein said ether group is tetrahydrofuran or diethyl oxide.

23. **(New)** In the preparation of a metallocene catalyst component characterized by the formula:



wherein Cp is a substituted or unsubstituted cyclopentadienyl group, Flu is a substituted or unsubstituted fluorenyl group, R'' is a structural bridge between Cp and Flu imparting stereorigidity to the component, M is a metal Group III of the Periodic Table, each R' is the same or different and is hydrogen, a silyl group or a hydrocarbyl group having from 1 to 20 carbon atoms and n is 0, 1 or 2,

the process comprising:

- (a) providing a suspension of  $\text{MCl}_3(\text{THF})_n$  in an ether;
- (b) providing a suspension of a dilithium salt of  $(\text{CpR}''\text{Flu})$  in an ether;
- (c) reacting suspensions (a) and (b) at molar ratio of suspension (b) to suspension (a) of less than 2 in a salt metathesis reaction at a temperature of from  $-80^\circ\text{C}$  to  $60^\circ\text{C}$ ;
- (d) crystallizing the product of said salt metathesis reaction from said ether in the form of a crystalline powder;
- (e) recovering said crystalline powder and alkylating said crystalline powder with an alkylating agent incorporating  $(\text{C}_3\text{R}'_5)$  in a solvent at a temperature of from  $-80^\circ\text{C}$  to  $60^\circ\text{C}$ , to produce said metallocene catalyst component; and
- (f) retrieving a neutral complex of said metallocene catalyst component.

24. **(New)** The method of claim 23 wherein the molar ratio of suspension (b) to suspension (a) is about 1.

25. (New) The method of claim 23 wherein said alkylating agent is selected from the group consisting of  $\text{Mg}(\text{C}_3\text{R}'_5)$  and  $\text{Li}(\text{C}_3\text{R}'_5)$ .

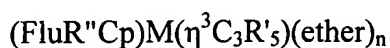
26. (New) The method of claim 23 wherein said salt metathesis reaction is carried out at a temperature of about 20 °C.

27. (New) The method of claim 23 wherein the ether is tetrahydrofuran or diethyl oxide.

28. (New) The method of claim 23 wherein the solvent is toluene.

29. **(New)** A polymerization process comprising:

(a) providing a catalyst system effective for the polymerization of ethylenically unsaturated monomers which catalyst system comprises a metallocene catalyst component characterized by the formula:



wherein Cp is a substituted or unsubstituted cyclopentadienyl group, Flu is a substituted or unsubstituted fluorenyl group, R'' is a structural bridge between Cp and Flu imparting stereorrigidity to the component, M is a metal Group III of the Periodic Table, each R' is the same or different and is hydrogen, a silyl group or a hydrocarbyl group having from 1 to 20 carbon atoms and n is 0, 1 or 2;

(b) contacting said catalyst system with an ethylenically unsaturated monomer in a polymerization reaction zone under polymerization conditions to form a polymer product; and

(c) recovering said polymer product from said polymerization reaction zone.

30. **(New)** The process of claim 29 wherein said monomer is a non-polar monomer selected from the group consisting of ethylene, C<sub>3+</sub> alpha olefins, and styrene.

31. **(New)** The process of claim 29 wherein said monomer is a polar monomer selected from the group consisting of methacrylate and a diene.

32. **(New)** The process of claim 29 wherein in said metallocene catalyst component M is yttrium, lanthanum, neodymium or samarium and R'' an isopropylidene group, a diphenylmethylene group, an ethylenyl group or a dimethylsilyl group.

33. (New) The process of claim 32 wherein in said metallocene catalyst component  $C_3R'_5$  is  $CH_2-CH=CH_2$

34. (New) The process of claim 33 wherein in said metallocene catalyst component said ether group is selected from the group consisting of tetrahydrofuran dioxane, diethyl oxide and diisopropyl oxide.